Chapter 1: Purpose and Need

1.1 Introduction

Project Location

The project location is shown in Figure 1-1, Vicinity Map. The Cheyenne Overpass study area encompasses the south Portneuf River Valley at the south end of Pocatello in Bannock County, Idaho. This EA analyzes the environmental consequences of the No-Build (No-Action) Alternative and proposed transportation and safety improvements to Cheyenne Avenue between Bannock Highway and South 5th Avenue east of Interstate 15 (I-15). Tech Farm Road and Portneuf Road are the north and south boundaries of the study area, respectively (see Figure 1-2, Study Area Boundary).

Project Sponsors

This Environmental Assessment (EA) has been prepared according to the provisions of the National Environmental Policy Act (NEPA) and the corresponding regulations and guidelines of the Federal Highway Administration (FHWA), the lead federal agency; the Idaho Transportation Department (ITD), which administers the Federal Aid program in Idaho; and the City of Pocatello (City), the project co-sponsor.

Level of Environmental Documentation

FHWA determines that an Environmental Assessment (EA) is the proper level of environmental documentation for the proposed action. This decision is based on the best scientific and available information and is consistent with Council on Environmental Quality regulations (40 Code of Federal Regulations 1508.27).

The following project characteristics support FHWA's determination that the proposed action is a unique circumstance that does not require an Environmental Impact Statement, and an EA is appropriate:

- The environmental evaluation (ITD Form 0654) identified no sensitive or unique ecological and/or socioeconomic resources.
- Land use changes have been planned for the southern part of Pocatello since 1996 when the BPO identified a need for a new roadway connecting South 5th Avenue to Bannock Highway.

- The corridor being considered for the proposed action is low-quality habitat that has been previously disturbed for agricultural uses such as pastureland or is undeveloped shrub-steppe vegetation.
- The alignment corridor crosses the Portneuf Valley at the southern end of Pocatello and does not contain any wildlife migration routes that would be disturbed by the proposed action.

The absence of natural and environmentally sensitive resources and the anticipated socioeconomic benefits of implementing the proposed action substantiate FHWA's determination that an EA is the appropriate level of environmental documentation for this project.

Project History

In 1996, the Bannock Planning Organization (BPO), the regional metropolitan planning organization for northern Bannock and eastern Power Counties and the cities of Chubbuck and Pocatello, Idaho, identified the need for a connecting roadway from South 5th Avenue to Bannock Highway. BPO formulates transportation policies, plans, and programs for formal adoption and implementation by member agencies and is responsible for preparing and updating the Long-Range Transportation Plan (LRTP) every 3 years. Before any transportation project can be constructed, it must be listed and approved in the LRTP (BPO 1999).

In the 1996 LRTP Update, a connector from Bannock Highway to South 5th Avenue was selected for construction and was listed in the Transportation Improvement Program (TIP) for funding. Although the 1996 LRTP Update did not specifically list the Cheyenne Overpass, Pocatello project, it did acknowledge that of the 20 projects recommended or already selected for funding in the TIP, the Cheyenne Overpass, Pocatello project was one of 13 projects for which the BPO completed the air quality conformity determination required by the regulatory agencies. The 1996 LRTP Update identified the Cheyenne Avenue crossing as a barrier to mobility and road connectivity in the rapidly growing Indian Hills–Johnny Creek area.

The 1996 LRTP Update also identified the need for a Bannock Highway–South 5th Avenue connector to decrease congestion and improve mobility on Bannock Highway. The project description identified a connector intersection with Bannock Highway somewhere near Cheyenne Avenue and with South 5th Avenue somewhere near the Idaho Transportation Department's office and maintenance complex. In 1997, as a follow-up to the 1996 LRTP Update, BPO completed the *Corridor Preservation Study, Connection of Bannock Highway to South 5th Avenue* (BPO 1997). This study examined the feasibility of constructing a cross-valley connector to improve mobility in the south end of

town and to decrease congestion on Bannock Highway. The most recent 2002 LRTP continues to identify the need for a cross-valley connector as a high-priority project.

1.2 Purpose

The current Cheyenne Avenue at-grade railroad crossing intersects two mainline tracks in the Pocatello Union Pacific Railroad (UPRR) yard. The two tracks at the crossing carry heavy train traffic, which delays east-west vehicle traffic and causes safety concerns.

The purpose of the proposed action is to eliminate the continuing traffic delays and safety concerns at the Cheyenne Avenue UPRR crossing and to improve east-west travel between Tech Farm Road to the north, Portneuf Road to the south, Bannock Highway to the west, and South 5th Avenue to the east.

1.3 Need

The Cheyenne Avenue railroad crossing remains on the Idaho Transportation Department's list of high-priority crossings. Upgraded control arms were installed at the crossing in 1997, but the at-grade crossing still limits and slows east-west travel.

The LRTP identifies the Cheyenne Avenue crossing as a barrier to mobility in the Indian Hills–Johnny Creek area. A BPO study in 1996 identified a grade-separated rail crossing as the solution to the congestion and lack of mobility for all modes of travel (BPO 1996).

1.4 Description of the Proposed Action

The proposed action would provide a new system linkage to the transportation system that serves the Pocatello area to and from the south by constructing a five-lane, east-west connector between Bannock Highway and South 5th Avenue. The proposed action would also improve regional travel by providing an alternate route from the Indian Hills–Johnny Creek area to central Pocatello. In addition, the project would improve the safety of crossing the UPRR tracks between Benton Street and Portneuf Road by providing a grade-separated crossing, which would allow uninterrupted traffic flow between Bannock Highway and South 5th Avenue north to the I-15/South 5th Avenue interchange.

The proposed build alternatives for the Cheyenne Overpass, Pocatello project would be constructed in two phases.

- **Phase 1** would include construction of a five-lane, east-west arterial (two lanes in each direction with a center turn lane) from Bannock Highway to South 2nd Avenue with a tie-in to the existing South 2nd Avenue alignment. After Phase 1 is completed, the existing Cheyenne Avenue crossing would be closed and the bridge over the Portneuf River would be removed. Cheyenne Avenue would dead-end at a physical barricade or cul-de-sac just west of the existing Portneuf River bridge crossing.
- **Phase 2** would extend the five-lane configuration (two lanes in each direction with a center turn lane) described in Phase 1 from the South 2nd Avenue tie-in east to South 5th Avenue, crossing under I-15.

This EA analyzes the environmental impacts of the entire Cheyenne Overpass, Pocatello project (Phase 1 and Phase 2) and the No-Build Alternative. The City of Pocatello has programmed Phase 1 and is in the planning stages for Phase 2. Phase 1 construction is currently programmed for fiscal year 2006. After Phase 1 is completed, access to South 5th Avenue would be provided by South 2nd Avenue through Ross Park. Completing Phase 2 of the proposed action would provide a more direct access to South 5th Avenue and would eliminate the increased traffic and delays through Ross Park.

1.5 Existing Transportation System

The existing roadway system in the study area consists of a freeway (I-15), state and local arterial routes (Bannock Highway and South 5th Avenue), and local collector streets (South 2nd Avenue and Cheyenne Avenue). Bannock County is served by a functional classification of streets such that freeways are designed to carry large volumes of traffic at high speeds and local streets are designed to carry only local traffic and to facilitate access to properties. Each element of the existing roadway system is described below and is shown in Figure 1-2, Study Area Boundary.

1.5.1 Freeway System

1.5.1.1 I-15 and Interchanges

I-15 is an essential element of the local, regional, and national circulation system. As part of the national interstate system, I-15 functions as a north-south link between southern California and Canada. Because Pocatello is generally oriented north to south, I-15 runs along the entire length of Pocatello and provides access to the city at several locations. Within the Pocatello area, I-15 has four

interchanges and is mostly a four-lane roadway. From north to south, the four interchanges are Portneuf Gap, South 5th Avenue, Center Street, and Pocatello Creek.

1.5.2 Arterial System

1.5.2.1 Bannock Highway

Bannock Highway is the main north-south roadway serving the south Pocatello area west of the Portneuf River. The two-lane road is classified as a principal arterial with portions of the roadway under the jurisdiction of the City of Pocatello or Bannock County. The posted speed limit on Bannock Highway is 35 mph (miles per hour) in some sections and 45 mph in other sections and includes a 20-mph school zone. Numerous driveways are accessed from Bannock Highway, and many cross streets intersect the highway. Arterial streets such as Bannock Highway primarily serve local traffic between urban and suburban centers.

1.5.2.2 South 5th Avenue

South 5th Avenue is the main north-south roadway serving the south Pocatello area east of the Portneuf River. Within the study area, the five-lane road is classified as a minor arterial and has two lanes in each direction with a center two-way left-turn lane. South 5th Avenue has a posted speed limit of 45 mph with numerous driveways and intersecting streets. North of the I-15/South 5th Avenue interchange, South 5th Avenue is classified as a principal arterial. Portions of the roadway are under the jurisdiction of the City of Pocatello or Bannock County.

1.5.3 Collector System

1.5.3.1 South 2nd Avenue

South 2nd Avenue is a north-south, two-lane collector that parallels the Portneuf River and UPRR tracks on the east side of the river. The roadway bisects Ross Park and has a posted speed limit of 20 mph through the park and 45 mph outside the park.

1.5.3.2 Cheyenne Avenue

Cheyenne Avenue is an east-west, two-lane collector that connects South 2nd Avenue and Bannock Highway. Cheyenne Avenue provides the only Portneuf River and UPRR crossing between downtown Pocatello (3 miles to the north) and Portneuf Gap (4 miles to the south). Cheyenne Avenue is classified as a

collector and is under the jurisdiction of the City of Pocatello. The roadway has a posted speed limit of 25 mph and includes a 20-mph school zone. Cheyenne Avenue turns into South 2nd Avenue immediately east of the Portneuf River and the UPRR at-grade crossing.

1.5.4 Modal Relationships

Modal relationships examine how roadways, airports, mass transit services, and bicycle and pedestrian facilities interface with and complement each other as part of an integrated system. In the vicinity of the Cheyenne Overpass corridor, the primary modal relationships are mass transit and pedestrian and bicycle trails.

1.5.4.1 Mass Transit Services

Pocatello Regional Transit (PRT) operates both fixed-route and demand-response bus systems. Fixed routes run on regular schedules throughout the community. Demand service routes are scheduled in advance to provide seniors and disabled citizens with door-to-door transportation. Because of budget constraints, PRT's fixed routes run primarily on north-south routes through the metropolitan area and cover high-density destinations. Existing transit routes within the south Pocatello area follow Bannock Highway and South 5th Avenue.

The months of heaviest use for the transit system are September through April, which correspond to the school schedule at Idaho State University and generally to the schedule of School District 25, which encompasses Pocatello and Chubbuck (BPO 1999).

Currently, there are limited transit pullouts for PRT buses along most of the existing bus routes. The LRTP Update identifies future transit stops as being important to the safety and operation of the transit system and specifies the need to locate them at major trip generators when planning and designing new arterials and collectors.

1.5.4.2 Pedestrian and Bicycle Trails

The main pedestrian and bicycle trails in the study area are the American Micro, Inc.–Kirkham Trail (AMI-Kirkham Trail), which runs from the Pocatello Zoo to South 2nd Avenue, and the Portneuf Greenway Trail, which runs parallel to the Portneuf River and through part of the Edson Fichter Nature Area. Figure 3-4, Existing Bicycle and Pedestrian Trails, shows the existing bicycle and pedestrian trail network in the study area.

The Portneuf Greenway Foundation and the City of Pocatello plan to extend the Portneuf Greenway Trail farther south along the river. Ultimately, the trail is intended to provide biking and pedestrian paths along a north-south corridor

through the city with connections to bikeways and pedestrian paths along current and future city streets.

1.6 Projected (Forecasted) Transportation System Demand

BPO develops and maintains a regional travel demand model that simulates the transportation network for the Pocatello-Chubbuck metropolitan area. This model allows BPO to develop traffic forecasts based on the expected growth in population and employment in the area as well as other demographic variables.

1.7 Level of Service

Traffic capacity is defined as the maximum number of vehicles that can be accommodated by a given transportation facility within a reasonable margin of safety and within a specified time. Level of service (LOS) defines the extent to which a facility is at or near capacity. Levels of service quantify traffic conditions in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience.

Six levels of service ranging from LOS A to LOS F are used to define congestion and the operating conditions on roadways. Each level represents a range of operating conditions, with LOS A representing the best operating conditions (free-flowing traffic) and LOS F the worst operating conditions (extremely congested, stop-and-go traffic). Level of service definitions are shown below in Table 1.7-1.

Table 1.7-1. Level of Service Definitions

Level of Service	Definition
A	Free-flow operations. Vehicles are almost completely unimpeded in their ability to maneuver within the traffic stream. This LOS affords the driver a high level of physical and psychological comfort. Incident effects are easily absorbed at this level.
B	Free-flow operations. The ability to maneuver within the traffic stream is only slightly restricted, and the general level of physical and psychological comfort provided to drivers is still high. Incident effects are still easily absorbed.
C	Speeds remain high, but freedom to maneuver within the traffic stream is noticeably restricted, and lane changes require more vigilance on the driver's part. The driver now experiences a noticeable increase in tension because of this additional vigilance. Minor incidents may still be absorbed, but the local deterioration in service will be substantial.
D	Speeds begin to decline slightly. Freedom to maneuver within the traffic stream is more noticeably limited, and the driver experiences a reduced physical and psychological comfort level. Even minor incidents can be expected to cause queuing because the traffic stream has little space to absorb disruptions.
E	Operations at this level are volatile because there are virtually no usable gaps in the traffic stream. Any disruption to the traffic stream, such as a vehicle entering from a ramp or changing lanes, can cause following vehicles to give way to admit the vehicle. This can establish a disruption wave that propagates throughout the upstream traffic flow. At capacity, the traffic stream has no ability to dissipate even the most minor disruptions, and any incident can be expected to produce a serious breakdown with extensive queuing. Maneuverability within the traffic stream is extremely limited, and the level of physical and psychological comfort afforded the driver is extremely poor.
F	Breakdown in vehicle flow, resulting in stop-and-go conditions. The level of physical and psychological comfort afforded the driver is extremely poor.

Source: *Highway Capacity Manual*, Third Edition (Transportation Research Board 1997)

1.8 Existing Traffic Conditions

A level of service analysis was performed in conjunction with this EA to characterize existing and future traffic conditions in the study area. Table 1.8-1 lists the primary arterials and collector streets in the study area and the existing average daily traffic (ADT) volumes and peak-hour level of service for each roadway segment.

Of the five roads in the study area, all are currently operating at LOS C or better. According to the ITD 2002 Design Manual, the lowest acceptable level of service for arterial roadways such as Bannock Highway and South 5th Avenue is LOS C, while the lowest acceptable level of service for collectors such as Cheyenne Avenue and South 2nd Avenue is LOS D.

Table 1.8-1. Existing Roadway Capacities and Levels of Service

Roadway	Functional Class	Lanes	Daily Volume (ADT)	Capacity at LOS C (ADT)	Capacity at LOS D (ADT)	LOS
I-15, South 5th Avenue to Portneuf Gap	Interstate	4	16,000	63,000	73,000	C or better
South 5th Avenue	Minor Arterial – Urban	5	3,162	22,000	28,000	C or better
Bannock Highway	Principal Arterial – Urban	2	7,000	9,000	11,500	C or better
Cheyenne Avenue	Collector – Urban	2	2,200	7,500	10,000	C or better
South 2nd Avenue	Collector – Urban	2	2,600	7,500	10,000	C or better

Source: Thresholds developed by HDR Engineering, Inc. from *Highway Capacity Manual*, Third Edition (Transportation Research Board 1997)

1.9 Social and Economic Demands

BPO determines future-year regional travel demand based on a variety of factors, including local land uses and population projections, and determines future transportation capacity demand based on the LRTP Update. Table 1.9-1 shows socioeconomic information for the Pocatello-Chubbuck metropolitan planning area in 2000 and 2025. These figures are based on Traffic Analysis Zone information taken from the BPO traffic model that approximates city boundaries and forecasts socioeconomic changes anticipated over the next 25 years. The model uses data available from the State of Idaho through the Idaho Department of Commerce and from the U.S. Census Bureau for the Pocatello-Chubbuck metropolitan planning area.

Table 1.9-1. Socioeconomic Changes 2000–2025, Pocatello-Chubbuck Metropolitan Area

	2000	2025	Percent Change	Compounded Growth Rate
Population	69,916	92,773	32.7%	1.1%
Housing units	25,286	37,056	46.5%	1.5%
Employment	35,687	57,604	61.4%	1.9%

Sources: BPO LRTP Update 2002–2025; U.S. Census Bureau 2000

As shown in Table 1.9-1, the metropolitan population is projected to grow from about 70,000 in 2000 to about 93,000 in 2025, an annual increase of about 1.1%. Total employment is projected to increase 1.9% annually over the same period. As a result of population, housing, and employment increases in the future, traffic volumes on local roads are expected to increase as well.

1.10 Future Traffic Conditions without Improvements

As shown in Table 1.9-1 above, Socioeconomic Changes 2000–2025, Pocatello-Chubbuck Metropolitan Area, population in the Pocatello-Chubbuck metropolitan planning area is expected to increase by almost 33% between 2000 and 2025, which would result in an increase in travel demand and a decrease in level of service. Table 1.10-1 below shows the level of service in 2025 on key links in the roadway network without any improvements to the existing transportation system.

Table 1.10-1. 2025 LOS Summary for Key Network Links without Transportation System Improvements

Road Segment	Lanes	Capacity for LOS E (ADT)	2025 No-Build Volume (ADT)	2025 No-Build LOS
South 5th Avenue				
North of Century High School	5	31,500	3,948	A
South of I-15 interchange	5	31,500	4,219	A
Bannock Highway				
Bannock Highway south of Cheyenne Avenue (south leg)	2	13,500	8,931	C
Bannock Highway north of Cheyenne Avenue (north leg)	2	13,500	3,556	A
Bannock Highway north of Johnny Creek Road	2	13,500	19,201	F
South 2nd Avenue				
Through Ross Park	2	12,000	8,714	D
Cheyenne Avenue				
East of Bannock Highway	2	12,000	8,415	D

Source: HDR Engineering, Inc. 2003

1.11 Roadway and Safety Deficiencies

There are several operational deficiencies and safety concerns in the Cheyenne Avenue corridor study area.

1.11.1 Operational Deficiencies

1.11.1.1 Delay at Cheyenne Avenue At-Grade Crossing

The Cheyenne Avenue railroad crossing is at the southern end of the UPRR Pocatello yard. Immediately north of the crossing, all UPRR yard tracks converge into two mainline tracks. In addition to the railroad car switching that typically takes place in a railroad yard, train traffic on the mainlines that extend south of the yard averages about 30 trains per day and can be as high as 40 trains per day. Consequently, the Cheyenne Avenue crossing can be affected by train traffic at any time.

With trains averaging 1 to 1.5 miles in length and a speed limit of 20 mph through the railroad yard, the delay times for vehicles at the railroad crossing can be as high as 4 to 5 minutes, which can double when another train is approaching from the other direction as the first train is leaving. Also, when trains are switching railroad cars and need to use the railroad crossing, these delays can increase to 25 to 30 minutes.

Table 1.11-1 compares the Cheyenne Avenue corridor travel delay and cost in lost wages because of traffic delays for existing (2003) and 2025 conditions.

Table 1.11-1. Synchro Analysis of Existing and 2030 Annual Cost in Lost Wages without Cheyenne Overpass Improvements

Condition or Alternative	Total Corridor Train Delay[a] (minutes/year)	Annual Train Delay Cost[b]
2003 Existing Conditions	33,134	$374,500
2025 No-Build Alternative	110,287	$1,246,500

[a] Total delay waiting at train crossing while traveling east and west on Cheyenne Avenue.

[b] Value of time waiting at train crossing while traveling east and west on Cheyenne Avenue. Assumes 1.37 persons per vehicle. Cost based on hourly wage for Bannock County based on 2000 U.S. census per capita income divided by 40-hour workweek. Yearly travel cost is for weekday travel.

In addition to the economic impacts associated with vehicle delay at the Cheyenne Avenue crossing, emergency response vehicles avoid the crossing due to the uncertainty of being able to cross during an emergency. Finally, idling vehicles at the crossing contribute to ongoing air quality problems in the Pocatello area (primarily particulates and carbon monoxide).

1.11.1.2 Deficiency in Local Roadway Network

There are three east-west connectors in the greater Pocatello area, none of which is very direct. One connector extends from Cheyenne Avenue north along South 2nd Avenue through Ross Park. A second connector goes northwest on Bannock Highway to Benton Street and then crosses over the UPRR tracks near downtown. The last connector is in the southern part of the Portneuf Valley and is accessed by taking Bannock Highway several miles southeast of Pocatello to the Portneuf Gap/I-15 interchange.

As a result, commuters in the southern part of the study area, especially the rapidly growing Indian Hills–Johnny Creek area, spend more time crossing the valley which contributes to increased congestion on the few roads that do provide east-west linkages.

1.11.2 Safety Deficiencies

The Cheyenne Avenue/UPRR at-grade crossing has presented ongoing safety issues for a number of years. Over the 10-year period from 1991 to 2000, three train-automobile accidents occurred at the UPRR/Cheyenne Avenue railroad crossing. One of the accidents involved two fatalities and one injury. The fatality accident occurred before gate arms were installed at the crossing.

As an interim safety measure, upgraded control arms were installed at the at-grade rail crossing in 1996. There have been no accidents at the crossing since the gate arms were installed, but the crossing continues to delay east-west corridor travel. The at-grade crossing continues to present safety concerns because, as traffic is delayed at the crossing, vehicles either try to go around the arms or make U-turns and return to Bannock Highway or South 5th Avenue.

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